

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

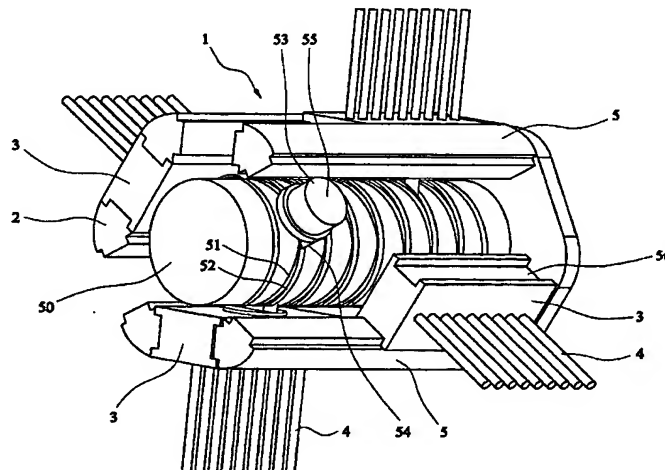
(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number
WO 2004/048841 A1

- (51) International Patent Classification⁷: **F16L 55/30**, 55/38
- (74) Agent: **VINSOME, Rex, Martin**; Urquhart-Dykes & Lord, St Nicholas Chamber, Amen Corner, Newcastle Upon Tyne NE1 1PE (GB).
- (11) International Application Number: **PCT/GB2003/005019**
- (22) International Filing Date:
18 November 2003 (18.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0227383.7 23 November 2002 (23.11.2002) GB
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **UNIVERSITY OF DURHAM** [GB/GB]; Old Shire Hall, Old Elvet, Durham DH1 3HP (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): **APPLETON, Ernest** [GB/GB]; 9 Dunelm Court, South Street, Durham DH1 4QX (GB).
- Published:**
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: CONDUIT TRAVERSING VEHICLE



(57) **Abstract:** A conduit gripping apparatus (1) for a vehicle travelling along a conduit such as an oil pipeline is disclosed. The apparatus comprises a housing (2) having a plurality of surface engaging elements (3) carrying sets of resilient bristles (4). The bristles engage a surface of the conduit and resist relative movement of the corresponding surface engaging element (3) and the surface of the conduit in a first direction along the conduit more than in a second direction opposite to said first direction. Each surface engaging element is adapted to execute reciprocating movement, relative to the housing (2), having a component substantially parallel to said first and second directions, and not all of said surface engaging elements execute said reciprocating movement in phase with each other, such that the surface engaging elements remain in contact with the surface of the conduit during said reciprocating movement.